THE RATE OF INTEREST AFTER THE WAR

By Irving Fisher,
Professor of Economics, Yale University, New Haven, Conn.

There are so many unknown or imperfectly known elements in the world-war and so many others which lie in the uncertain future that it would be impossible to make any very definite predictions concerning the rate of interest after the war. Much depends on whether the United States will be drawn into the conflict, on whether the European nations will repudiate their debts, on what will be the character of taxation after the war, on whether banking systems will collapse, whether the issues of paper money will be increased, whether emigration from Europe will be large or small, whether the tides of international trade will abstract gold from this country, whether new inventions, stimulated by the war, will materially affect industry, and on other possibilities beyond the ken of man.

All that we can do at present is to make arbitrary assumptions as to such unknowns,—to assume, for instance, that the United States will still remain out of the conflict, that the paper money situation will not grow much worse, if at all, that emigration from Europe will not constitute any considerable exodus, that national bankruptcies will, for the most part, be avoided, that taxation, after the war, though heavy, will not be comparable to the sacrifice of current income during the war, that no great influences on international trade, beyond those which are already obvious, will come forward, and that inventions will grow out of the war which will be of great use in industry and will require the investment of much capital.

The Determinants of the Rate of Interest

I have stated in *The Rate of Interest* what I believe to be the true principles on which the rate of interest depends. I shall not try here to summarize these principles further than to say that the rate of interest expresses the degree of human *impatience* for *future* dollars (or dollars' worth of enjoyable goods) as contrasted with *present* dollars (or dollars' worth of enjoyable goods). It relates to the terms on which present dollars will exchange for future

dollars. In such an exchange present dollars are at a premium, and the premium is the rate of interest. If all dollars, present and future, are supposed to have the same purchasing power over goods, the premium on present dollars, registering our impatience or preference for the present over the future, will depend on the relative *abundance* (as seen in the present) of present and future dollars, or of the present and future enjoyable goods which dollars will buy. Thus, the premium which we put on present dollars will be enhanced if present dollars are scarce. It is the man and the nation which is pinched today that will wish to borrow and will be willing to pay high rates for the accommodation. If, under ordinary circumstances, a man is willing to promise to pay $105 next year for the sake of securing $100 at once, he may be willing to pay a much higher price than said $105 if he is now in serious straits from which he expects to be relieved in the future. In other words, if the rate of interest is ordinarily 5 per cent, it will be more than 5 per cent if the present income of the world is temporarily reduced. The rate of interest depends largely on the *distribution in time* of the income stream.

The basic fact, therefore, on which any prognostications concerning the rate of interest must be determined is the expected stream of income to those concerned in determining the rate of interest. When, in general, the income stream of a nation is rising, that is, when it is increasing in time, the rate of interest will be high. Thus, in new countries, with great expectations, people feel safe in promising large amounts out of future expectations in return for relatively small amounts in hand at once.

EFFECTS OF THE WAR ON INCOMES

Now the most salient economic fact of the war is that the nations engaged in it are suffering an immense reduction in the income of their people. It is estimated that the people of Great Britain, France and Germany had an aggregate income before the war of approximately $80,000,000 a day and that the current cost of the war to these three countries is now about $60,000,000 a day or three quarters as much. This cost includes only the official expenditures of the three governments. It does not include the destruction of private property nor the loss of productivity. Most of the $60,000,000 a day (four-fifths in England) comes, in the first instance,

from loans, that is, from the accumulated wealth of the world, mostly of the belligerent countries. Exactly what the reduction in real current incomes has been (*i.e.*, from taxes, destruction of goods and lessened consumption) no one knows, but it is undoubtedly a very large percentage. It is estimated that the annual interest charge on war loans will, after the war, equal or surpass the total national budgets before the war.

But, as soon as the war is over, the thoughts of all will be directed to reconstruction and all Europe will be in the position of a new country, poor in immediate comforts but (relatively) rich in future expectations.

Such a condition will make for a high rate of interest. The spirit of Europe will be one of eagerness and impatience, just as is the spirit during the up-building of a new country; and this eagerness and impatience will be registered in a high rate of interest as they were while our forefathers were making America.

It is conceivable that curious things may happen to complicate this result. If the war continues much longer the government bondholders will be the virtual owners of Europe for years to come. The income tax for the rich may reach 50 per cent. The taxes on the poor may be equally oppressive. Rather than pay such tribute, for a lifetime, to the bondholder—who may not then be so popular as he is today!—the taxpayers may, by the wholesale, emigrate to the United States. Wealthy people, of more foresight than patriotism, after taking good care to sell out any holdings in government bonds, may change their residence to where taxes will not seem to be confiscation. The fate of European nations would then be similar to that so common to "assessment" insurance companies, which after gaily loading themselves up with obligations, lose their paying membership and go into bankruptcy.

But even such an outcome, or others which might be imagined, would not substantially alter the main result, namely that the owners, whoever they are, of Europe after the war will, during the re-building period, be eager borrowers and will lift up the rate of interest.

I am quite aware that many business men believe, on the contrary, that the rate of interest will be low. Those who reach this conclusion reason along what I believe to be fallacious lines, in some cases even falling into that ancient pitfall of thought, the

"money fallacy" of interest, according to which the rate of interest is supposed to be inversely related to the amount of money in circulation. This and other fallacies I have discussed in *The Rate of Interest* and shall not discuss them here.

It is worth noting that what has been said concerning the future rate of interest applies from the moment peace is in sight. It does not fully apply before that time. During the war itself the rate of interest has been, as I predicted that it would be, in the *New York Times*, August 30, 1914, extremely variable, owing to the fitful fluctuations of numerous changing conditions. In the world as a whole, it has been somewhat higher than before the war and tending during the war to grow higher in Europe and lower in the United States.

LONG-TERM VS. SHORT-TERM LOANS

There should be noted, however, an important distinction between short-term and long-term loans and this distinction is especially important during war. When, in war time, a business man makes a loan to run for a time so short that repayment is expected to occur before the comparative opulence of peace, the contrast between the needy present, when the loan is contracted and the *still needy* future when it is repaid is not as great as in the case of a long-term loan, the repayment of which is expected to be made after peace and prosperity have come. One is willing to repay more liberally after the crisis is over than during it. It has thus come about, as we should expect, according to the principles laid down, that the rate of interest on long-term loans has, in general, risen more as well as fluctuated less than that on short-term loans.

As soon as peace is in sight or within a few weeks thereafter, long- and short-term loans will be more normally related, that is, the rate of interest on the two classes will be more nearly equal. For both, the rate will, I believe, rise immediately or soon after assurance of peace, the rate on short-term loans rising most, so as to catch up with the rate on long-term loans.

It should be noted that we are here speaking of pure interest and not of interest with the alloy of insurance against risk. The test of the correctness of our results must be made, therefore, by reference to industrial securities rather than to loans of governments engaged in war. Undoubtedly the announcement of peace will

raise the price of *government* bonds, at least of the victorious countries, because of increased confidence in the solvency of these countries. But such a phenomenon means a lower risk and not a lower rate of interest properly so called.

THE INFLUENCE OF PATRIOTISM

Additional reasons for these conclusions concerning a high rate of interest after the war are to be found in other directions.

During the war patriotic fervor keeps the *pure* rate of interest below what it would be if the war loans were made on a strictly business basis. In fact, it is probably true that most of the subscriptions to government loans are made, not so much for investment purposes, as "to help the cause." As soon as the war is over this element tending to keep the rate of interest down will vanish, or at any rate, greatly diminish. Governments will have to renew their loans at real market rates.

Thus far, I have spoken chiefly of the psychologic causes operating on the rate of interest, but these psychologic causes are conditioned on objective physical conditions. I have spoken of the war as cutting down the income stream of society and leaving at the end of the war, therefore, a prospect of a rapid ascent out of the depression.

The rate and manner of ascent, however, are not rigidly prescribed. There will be many different opportunities open to the survivors of the war from which to choose and the nature of this range of choice will be an important factor in fixing the rate of interest. Those who have the task of reconstructing Europe will be confronted with alternative methods and degrees of possible reconstruction. The manner in which the existence of many different optional methods of production and therefore of investment, enters into the determination of the rate of interest, is very subtle, but very important.

A land owner in the devastated regions of France or Belgium, may find that to re-build, re-stock, re-plant and fertilize his farms in a certain specific manner and degree will offer returns in the future out of all proportion to the required sacrifices in the present. That is, contrasting what he can expect from prompt and full repairs with what he can expect without them, he notes a vast gain in the future for a small cost in the present. A present outlay on his

land of $10,000 may offer a return in future years equivalent to, say $2,000 a year, making a rate of return on sacrifice of 20 per cent. If, therefore, by mortgaging his land, he can borrow the desired $10,000 even at a high rate, indeed at any rate less than 20 per cent, he will be glad to do so. He will be an eager borrower because he has a great opportunity. Such great opportunities for large returns on small investments from the rapid re-building of Europe, the reconstruction of her cities, ships, warehouses, factories, railways, roads, bridges, the re-stocking of dealers, will presumably be in evidence almost everywhere. The existence of such opportunities,—that is, of large possibilities of future returns on present sacrifices,—will make men impatient, impel them to borrow and tend to raise the rate of interest.

EFFECT OF INVENTIONS ON INVESTMENT

The rare opportunities for investment which will present themselves soon after the end of the war will probably be further enhanced by a number of technical inventions to which war always stimulates the mind of man. Inventions originally made for military purposes often have industrial uses, while, in addition, blockades and other interruptions of ordinary industry and commerce, lead directly to industrial inventions. An example of the first type may be seen in commercial submarines and aeroplanes, as by-products of military submarines and aeroplanes. Examples of the other type are also before us. American watch and clock manufacturers formerly imported their crystals but, the supply having been cut off by the war, and "necessity being the mother of invention," they have devised new and improved methods of making crystals themselves. How many and how important may be the commercial inventions growing out of the war no one yet knows. I shall be surprised if in the aggregate the influence of new inventions is not considerable. Inventions, by offering big future returns for comparatively small present sacrifices in developing the inventions, tend to raise the rate of interest.

CREDIT WILL RAPIDLY EXPAND

Finally, one important result of the ending of the war will almost certainly be a rapid expansion of credit which will tend to create a period of rising prices and a high rate of interest which

usually goes with such "boom" periods. In order to conserve gold, European nations are trying to get the public more used to the check system. Such a change, which has long been overdue on the continent, will probably, after the war, go on by leaps and bounds. The French government, for instance, is urging the people of France to practice deposit banking in order to "mobilize the national cash," *i.e.*, to draw it out of French stockings into French banks. The bank of France is distributing a pamphlet of explanation and instruction in the American system. If this prognostication proves to be correct, the credit expansion will lead to a continued rise in prices, except so far as this result may possibly be checked by the resumption of specie payments, by a policy of contraction and by the cancellation of paper money. But, up to the present time, paper money inflation has not progressed far. According to Professor Whitaker, whose figures relate to the close of 1915, the paper pound sterling had depreciated relatively to gold, as measured by foreign exchange rates against the American dollar, only about 2½ per cent, the French franc only about 12 per cent, and the German mark about 21 per cent. Moreover, it is not likely that these depreciations will be rapidly diminished in view of historical precedents after the Napoleonic wars, after the civil war, etc.

Even if a policy of rapid resumption of specie payments should be adopted, I have little doubt, assuming that the inflation at the close of the war is not much more than at present, that, for many years after the war is over, there will be a general rise in prices, a general period of expansion and with it a high rate of interest, such as almost invariably accompanies boom periods. It would not surprise me if, within a year after the close of the war, the general rate of interest in England, France and Germany should average 7 per cent or above.

INTEREST RATES IN THE UNITED STATES

What has been said applies primarily to the warring European countries and not to the United States. So far as the United States is concerned, the effect will, I believe, be in the same general direction but not so pronounced. The credit relations connecting the two sides of the Atlantic will be reversed, we becoming lenders to Europe instead of borrowers from Europe.

The level of interest rates in Europe has hitherto been below

ours and therefore tended to draw ours down. Hereafter it will be above ours and will tend to draw ours up. We have already bought hundreds of millions of European securities or bought back American securities held by European owners. Mr. Loree, President of the Delaware and Hudson Railroad, estimates that a half billion of dollars' worth of United States railroad securities alone were returned to this country from abroad inside of six months.

It should be added that the present low level of the rate of interest in the United States is abnormal. Owing to the very sudden increase in our gold reserves, which could be utilized by the banks only by extending their credits, these banks have extended their credit by offering low rates until their deposits become the requisite multiple of the reserve. The low rate is simply a temporary incident connected with the adjustment in the loan machinery. When the present readjustment is complete I anticipate that the rate of interest in the United States will be considerably higher than at present, quite irrespective of the ending of the war.

The foregoing are some of the reasons why I cannot share the opinion of those who believe the rate of interest after the war will be low. It has been argued that Europe will be so crippled after the war as not to have much borrowing power. Now it may well be that the borrowing power of Europe will be smaller if the war is prolonged than if it were to end today. But the important point is that Europe, whether she be a big borrower or a little one, will be a borrower instead of a lender. Moreover, an outlet for American funds seeking investment will be found in those outlying countries formerly accustomed to borrowing in Europe. The Argentine and other South American countries and the Orient will tend to borrow hereafter in the United States. This result will also tend to raise the rate of interest in the United States.

In closing, I would repeat that I realize the existence of unforeseen elements and the fact that those which can be foreseen are unknown in their relative importance. This fact makes such a forecast as I have attempted only a very tentative affair. While I feel considerable confidence that the rate of interest in Europe, for many years after the ending of the present war, will tend to rise and that this country will feel some effects of the rising tendency, no quantitative prediction as to the magnitude of this result can be other than a guess.